

# CALAMINTHA (LABIATAE) IN THE SOUTHERN UNITED STATES

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The last world-wide account of *Satureja* (by Briquet in Engler & Prantl, 1897) defines the genus very broadly, merging with it *Micromeria* and *Calamintha*, which the generally conservative Bentham (in DC., 1848) had retained as distinct. DeWolf, in summarizing the cultivated species (1954), observed that Briquet "enlarged *Satureja* to such an extent that it was almost undefinable." He follows several recent European authors by recognizing five genera instead of one. The largest of those involving wild plants of the South is *Calamintha*, including the species treated in Small's *Manual* as *Clinopodium* groups *Herbacea* and *Fruticosa*. Only half of the six native species which I consider valid in the two groups have had proper combinations published for them under *Calamintha*. It is primarily to supply the missing ones, and incidentally to comment on their synonymy and taxonomy, that this brief account has been prepared. The species sometimes referred to *Satureja* but not included in *Calamintha*, and known to occur wild in the South (broadly delimited), are as follows.

ACINOS ARVENSIS (Lamarck) Dandy, *Journ. Ecology* 33: 326. 1946. *Satureja Acinos* (L.) Scheele. *Clinopodium Acinos* (L.) Kuntze. Neither Fernald nor Gleason reports this European weed from south of the Mason-Dixon Line; the following collection thus extends its range (see also Strausbaugh & Core, 1958). WEST VIRGINIA. Hampshire Co.: plentiful in old peach orchard near Hanging Rock, *Wilbert M. Frye* 8895, 25 June 1949 (SMU).

CLINOPODIUM VULGARE L. *Satureja vulgaris* (L.) Fritsch, including var. *neogaea* Fernald, *Rhodora* 46: 388. 1944. The species is represented at SMU by 19 sheets from North America (D.C., Michigan, New Jersey, North Carolina, Quebec, Vermont, Virginia, West Virginia, Wisconsin) and 11 from Europe (British Isles, Czechoslovakia, France, Germany, Italy, Netherlands, Sweden). All have leaves pilose on both surfaces, the European ones more variable as to density, but not separable from the North American plants; most are exactly the same. On the basis of this limited but diversified sample, it does not appear that Fernald's variety (supposed to differ in having leaves glabrous or only sparsely strigose above, and to represent the native American race) is at all tenable. The species is primarily northern, extending south in the mountains to western North Carolina.

MICROMERIA BROWNEI (Swartz) Bentham var. *PILOSIUSCULA* Gray. *M. pilosiuscula* (Gray) Small. *M. xalapensis* (HBK) Bentham.

*Satureja Brownei* (Swartz) Briquet var. *pilosiuscula* (Gray) Briquet. Central and northern Florida, adjacent Georgia (Decatur Co.), southern Louisiana (St. Bernard Parish), southern Texas (Brazoria to Cameron counties near the coast, locally inland in Bexar and Colorado counties); through Mexico to Guatemala. *M. Brownei* var. *Brownei* is confined to Jamaica; another variety is found in Cuba (rare) and Mexico (Yucatan Peninsula), and closely related species in the Bahama Islands and Hispaniola (Shinners, 1962).

PILOBLEPHIS RIGIDA (Bartram) Rafinesque, New Fl. N.A. 3: 52—53. 1838 ("1836"). *Satureja ? rigida* Bartram ex Bentham, Lab. Gen. et Sp. p. 354. 1832—1836. (Not seen; quoted in DC., Prodr. 12: 211. 1848.) *Pycnothymus rigidus* (Bartram) Small, Fl. S.E. U.S. (ed. 1) p. 1042. 1903. This is one of the many cases in which Small needlessly supplied a new name, overlooking the much older one of Rafinesque. The species occurs almost throughout peninsular Florida.

The following key and notes on *Calamintha* are based chiefly on collections at Southern Methodist University, Florida State University, and the University of Florida. Material of the introduced species was borrowed from the Gray Herbarium, and a few sheets of *C. arkansana* were examined on a visit to the University of Texas. Grateful acknowledgment is made to the several curators for their courtesies.

#### KEY TO THE SPECIES

- 1a. Herbaceous perennial (may flower the first year, appearing annual)
  - 2a. Stem pubescent; leaf blades elliptic to ovate
    - 3a. Corolla 22—35 mm. long; calyx 10—13 mm. long; leaf blades sharply and rather coarsely toothed. . . . . 1. *C. grandiflora*
    - 3b. Corolla 7—18 mm. long; calyx 2.8—10.2 mm. long; leaf blades entire or with shallow, rounded or incurved teeth
      - 4a. Calyx 6.0—10.2 mm. long, the hairs inside the throat barely or not exerted; blades of larger stem leaves 2—5 cm. long
        2. *C. officinalis*
      - 4b. Calyx 2.8—6.0 mm. long, the hairs inside the throat exerted, prominent; blades of larger stem leaves 0.8—2.4 cm. long
        3. *C. Nepeta*
  - 2b. Stem glabrous or pubescent only at nodes; leaf blades linear to elliptic lanceolate on flowering stems (broader on sterile shoots)
    - 5a. Nodes glabrous or inconspicuously pubescent; middle stem leaves 1—5 mm. wide, entire or occasionally with 1 or 2 teeth on each margin; plant developing stolons (commonly wanting at main flowering period), their leaves with orbicular-ovate or orbicular-rhombic blades; corolla 7—12 mm. long
      4. *C. arkansana*
    - 5b. Nodes moderately to densely pubescent; middle stem leaves 3—12 mm. wide, with 1—4 teeth on each margin; plant not developing stolons, sometimes with ascending leafy shoots, their

leaves with oblanceolate to oblong-obovate blades; corolla  
10—14 mm. long.....5. *C. glabella*

1b. Shrubby perennial

6a. Corolla 27—50 mm. long, bright red or rarely yellow; calyx  
8—18 mm. long.....6. *C. coccinea*

6b. Corolla 10—20 mm. long, light lavender or lavender pink with  
dark dots; calyx 6.0—7.5 mm. long

7a. Leaves sessile, minutely and densely pubescent

8a. Leaf blades linear- to oblong-lanceolate, widest about middle,  
not strongly tapered at base, with entire, revolute margins  
7. *C. Ashei*

8b. Leaf blades oblanceolate or obovate, tapered at base, the  
lower more or less toothed, the upper often entire and with  
revolute margins.....8. *C. dentata*

7b. Leaves petioled, glabrous.....9. *C. georgiana*

1. *C. GRANDIFLORA* Moench. *Satureja grandiflora* (Moench) Scheele.

There is no reliable record of the occurrence of this as a wild plant. In the Gray Herbarium there is one specimen from the herbarium of H. P. Sartwell, "Legit Curtiss," the habitat given as "Carol." followed by an illegible word, seemingly "Lenten" but possibly "Septen." was meant. To this has been added, in Asa Gray's handwriting, "wild? *Calamintha officinalis* L." The plant, native of Europe, is cultivated in the United States. It has been in my garden in Dallas for two years, barely surviving, and showing no inclination to bloom. Unless fresh evidence is forthcoming, this species should be excluded from the Southern flora.

2. *C. OFFICINALIS* Moench. *Satureja Calamintha* (L.) Scheele. The only North American specimen I have seen is the following, at the Gray Herbarium. VIRGINIA. Isle of Wight Co.: rich calcareous slopes along James River, west of old Fort Boykin, *Fernald & Long 13739*, 8 Sept. 1941. (Flowers past: calyx 6 mm. long, villous.)

3. *C. NEPETA* (L.) Savi. *Clinopodium Nepeta* (L.) Kuntze. *Satureja Nepeta* (L.) Scheele. *S. Calamintha* var. *Nepeta* (L.) Briquet, var. *nepetoides* (Jordan) Briquet, and var. *glandulosa* (Requien) Briquet. The *C. Nepeta-C. officinalis* complex is represented at SMU by 21 sheets from Europe and 10 from North America; an additional 46 from North America were borrowed. I am unable to follow with this material the very detailed account given by Briquet in *Les Labiées des Alpes Maritimes* or the very brief one given by Fernald. In one notable case, I found myself trying to call duplicates of *Ahles 17630*, from Granville County, North Carolina, by two different names, though when placed side by side they obviously represented only one moderately variable entity. There does seem to be a fairly good break between *C. Nepeta* and *C. officinalis*, and they are accordingly accepted as distinct though closely related species. *C. Nepeta* was found by Asa

Gray and J. Carey in Virginia and North Carolina in July, 1841, and had appeared at scattered localities elsewhere before the end of the 19th Century. It seems to have continued to spread gradually, but avoids the Coastal Plain. The record for Mobile County, Alabama, listed below, presumably represents a waif only; there are no recent collections from there. *C. Nepeta* is in flower from July to October. I have seen specimens from the following states and counties. ALABAMA. Jackson, Mobile. ARKANSAS. Sevier. DC. GEORGIA. Whitfield. KENTUCKY. Fayette. MARYLAND. Baltimore, Calvert, Talbot. NORTH CAROLINA. Forsyth, Granville, Orange, Vance. TENNESSEE. Anderson, Benton, Carroll, Cumberland, Knox, Roane, Rutherford. VIRGINIA. Botetourt, Campbell, Caroline, Chesterfield, Giles, Goochland, Hanover, James City, Rockbridge, Rockingham, Shenandoah, Smyth, Spotsylvania, Wythe, York. (Rather surprisingly, Strausbaugh & Core, 1958, do not report it from West Virginia.)

4. *C. arkansana* (Nuttall) Shinnery, comb. nov. *Hedeoma arkansana* Nuttall, Trans. Amer. Phil. Soc. n.s. 5: 186. 1834. "In moist and rocky prairies near the sources of the Kiamesha river. Flowering in May and June." (The locality is in eastern Oklahoma, at that time part of Arkansas Territory; see Geiser, 1956.) *Calamintha Nuttallii* Bentham in DC., Prodr. 12: 230. 1848. (Bentham cites "*Micromeria Nuttallii* Torr. et Gr. ms.," which presumably is the real original for the name. Illegitimate by present rules, since the epithet *arkansana* was available.) *C. glabella* var. *Nuttallii* (Bentham) Gray, Man. (ed. 2) p. 307—308. 1857. (Doubly illegitimate, since both the preceding and the following are cited.) *Micromeria glabella* var. *angustifolia* Torrey, Fl. N.-Y. 2: 67. 1843. *Satureja glabella* var. *angustifolia* (Torrey) Svenson, Rhodora 42: 7—8. 1940. *Calamintha glabella* var. *angustifolia* (Torrey) DeWolf, Bailey 2: 150. 1954. (Basynym incorrectly given as *Satureja glabella* var. *angustifolia* (Torrey) Svenson.) The name *Hedeoma glabrum* was used by Nuttall (Genera 1: 16, 1818) for this species and the next which he did not at first separate; it is nomenclaturally an illegitimate new name for the next species, proposed by Persoon.

Despite the great similarity in general appearance between this and the next, I agree with Fernald that the two are to be regarded as distinct although closely related. The peculiarity of leafy stolons (seldom present on herbarium specimens) needs to be studied during periods when the plant is not in flower. *C. arkansana* blooms from late May to early August. It is a plant of limestone areas, extending southwest from the Ozark region into central Texas, where it is rare. ARKANSAS. Baxter, Fulton, Izard, Lawrence, Randolph, Sharp, Stone. OKLAHOMA. Murray, Pontotoc, Rogers, Sequoyah. TENNESSEE. Wilson. TEXAS. Bell, Travis.

5. *C. GLABELLA* (Michaux) Bentham, in DC., Prodr. 12: 230. 1848. *Cunila glabella* Michaux, Fl. Bor.-Am. 1: 13. 1803. "In rupibus ripariis fluvii Tennessee, juxta Nashville." *Hedeoma glabrum* Persoon, Syn. Pl.

2: 131. 1807. (The change in form of the specific epithet was probably only a slip of the pen, reference being made to "Michx. sub Cunila." Pursh and Nuttall follow Persoon but change the gender to feminine, which under present rules is not permissible.) *Satureja glabella* (Michaux) Briquet in Engler & Prantl, Nat. Pflanzenfam. Teil IV. Abt. 3a: 302. 1897.

Flowering late May—July. Said by Fernald to occur in Kentucky, Tennessee, southern Missouri, and Arkansas. I have seen specimens from the following states and counties. ARKANSAS. Benton, Garland, Logan, Newton, Saline, Washington. OKLAHOMA. McCurtain.

6. *C. COCCINEA* (Nuttall) Bentham in DC., Prodr. 12: 229. 1848. *Cunila coccinea* Nuttall ex Hooker, Exotic Flora 2: t. 163. 1825. (There is a second t. 163 opening volume 3; Bentham erroneously quotes the latter. He also cites "*Melissa coccinea* Spreng., Syst. 2: 229," 1825, but that page is devoted to *Acer*; the precise citation is Syst. 4 pt. 2: 224, 1827, where *Cunila coccinea* is given as synonym.) Type (not seen): Florida, Ware (ANSP). Description supplied by Hooker from cultivated specimens, grown by Mr. H. Shepherd from seed from the type collection. *Satureja coccinea* (Nuttall) Bertoloni, Misc. Bot. 8: 23. (Not seen. Published in 24 parts, 1842—1863, according to Pritzel.) *Clinopodium coccineum* (Nuttall) Kuntze, Rev. Gen. Pl. 2: 515. 1891. *Clinopodium macrocalyx* Small, Fl. S.E. U.S. p. 1043 and p. 1337. 1903. Type: dry pine barrens, Indian River, Florida, Curtiss 2012, August (isotype examined, FLAS). *Satureja macrocalyx* (Small) Druce, Rept. Bot. Exch. Club 4 (1916): 644. 1917.

In flower from April to October. There is a tendency for flowers to be larger in the southeastern part of the range of this species (peninsular Florida), but the range of variation is continuous from one extreme to the other. The isotype of *Clinopodium macrocalyx* which I examined has calyx only 13 mm. long, and on this basis would run to *C. coccineum* in Small's own key; it does, however, have a very large corolla (46 mm. long). ALABAMA. Baldwin, Mobile. FLORIDA. Bay, Citrus, Escambia, Franklin, Gulf, Hernando, Holmes, Indian River, Okaloosa, Orange, Osceola, Pasco, Santa Rosa, Seminole, Wakulla. GEORGIA. Chandler, Emmanuel, Toombs, Wheeler, MISSISSIPPI. Harrison, Jackson, Stone.

7. *C. Ashei* (Weatherby) Shinnery, comb. nov. *Satureja Ashei* Weatherby, Rhodora 26: 80. 1924. Type: sandy pine woods, near Ocala, Marion Co., Florida, W. W. Ashe, April, 1923 (GH). Paratype: near Astor Park, Lake Co., Florida. Ashe, April 1823 (GH). (These specimens not examined. The detailed original description, key, and localities, leave no doubt as to the identity of the plant.) *Clinopodium Ashei* (Weatherby) Small, Bull. Torr. Bot. Club 51: 385. 1924.

Flowering late January to October. Another of the many endemics centering in the lake region of peninsular Florida; specimens seen from

Highlands, Marion, Polk, and Volusia counties. Dried plants of the next species lacking lower leaves are superficially very similar to this.

8. *C. DENTATA* Chapman, Fl. S. U.S. p. 318. 1860. "Sand ridges near Aspalaga, Florida" (Gadsden Co.) "Sept. and Oct." *Clinopodium dentatum* (Chapman) Kuntze, Rev. Gen. Pl. 2: 515. 1891. *Satureja dentata* (Chapman) Briquet in Engler & Prantl, Nat. Pflanzenfam. Teil IV. Abt. 3a: 302. 1897. In flower from April to October. Confined to northern Florida and southeastern Georgia. FLORIDA. Bay, Gadsden, Liberty, Wakulla, Walton. GEORGIA. Tattnall.

9. *C. georgiana* (Harper) Shinnars, comb. nov. *Clinopodium georgianum* R. M. Harper, Bull. Torr. Bot. Club 33: 243. 1906. New name for *Thymus carolinianus* (non "Walter") Michaux, Fl. Bor.-Am. 2: 9. 1803. Michaux described this species, but based his name on *Thymbra* ? *caroliniana* Walter, Fl. Carol. p. 162, 1788, which in reality was the quite different *Macbridea pulchra* Elliott, correctly to be called *M. caroliniana* (Walter) Blake, Rhodora 17: 132, 1915. DeWolf (1954) perpetrates several errors by referring this to "*Calamintha caroliniana* (Nuttall) Bentham"; neither of those authors is to be credited with the combination. The relevant *sensu* synonymy is as follows. *Calamintha caroliniana* (non "Walter") Sweet, Hort. Brit. (ed. 2) p. 408. 1830. Sweet quotes only *Thymus grandiflorus* "B. M." (i.e., Sims, Bot. Mag. 25: t. 997, 1807). Sims gives both *Thymus carolinianus* Michaux and *Thymbra* ? *caroliniana* Walter as synonyms, with query, and goes on to say "We have very little doubt that Walter's plant is the same with ours, but are not sufficiently certain with respect to Michaux's, to dare to adopt his specific name." It would be extremely difficult to decide whether Sims's name was legitimate or not on the basis of his statements about the synonymy. Fortunately we are spared this decision because it is illegitimate as a later homonym of *Thymus grandiflorus* (L.) Scopoli, Fl. Carniolica (ed. 2) 1: 424, 1772. Similarly *Calamintha grandiflora* (Sims) Pursh, Fl. Am. Sept. 2: 414, 1813 ("1814"), is illegitimate as a later homonym of *C. grandiflora* (L.) Moench, 1794. (In fact it is doubly illegitimate because Pursh cites all three of the binomials mentioned by Sims without query, but failed to adopt the oldest one.) *Satureja caroliniana* (non "Michaux") Briquet in Engler & Prantl, Nat. Pflanzenfam. Teil IV. Abt. 3a: 302. 1897. All the binomials with the epithet *caroliniana* are of course synonyms of *Macbridea caroliniana* (Walter) Blake on the basis of Walter's type, even though Michaux, Sweet, and Briquet all meant *Calamintha georgiana* on the basis of their descriptions.

Flowering from May to October. The most widespread (but not most abundant) of the shrubby species. FLORIDA. Holmes. GEORGIA. Baker, Clarke, Decatur, Elbert, Richmond, Screven, Upson. LOUISIANA. St. Tammany. MISSISSIPPI. Harrison, Pearl River. NORTH CAROLINA. Anson. SOUTH CAROLINA. Abbeville, Anderson, Chesterfield.

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